

The opinion in support of the decision being entered today was not written
for publication and is not binding precedent of the Board.

Paper No. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte MARCUS R. SKEEM,
SERGEJ-TOMISLAV BULJAN
and JEAN KRAMP

Appeal No. 2000-0207
Application No. 08/892,836

ON BRIEF

Before ABRAMS, FRANKFORT, and STAAB, Administrative Patent Judges.
STAAB, Administrative Patent Judge.

ON REQUEST FOR REHEARING

This case comes before us again on request for rehearing of our decision mailed
September 20, 2002 wherein we affirmed the examiner's § 103 rejection of claims 1,
5-9, 11-26 and 30-33, but reversed examiner's § 103 rejection of claims 3, 4, 10, 28, 29
and 34.

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BOARD OF PATENT APPEALS
AND INTERFERENCES**

Appellants contend that we have misapprehended or overlooked four points in arriving at our decision. We address the points raised by appellants in the order they are presented in their request.

I.

On page 1 of the request, appellants state that we concluded on pages 11-12 of our decision that the Buljan II declaration was ineffective to overcome the examiner's § 103 rejection of claims 1, 5-9, 11-26 and 30-33 directed to tools without a negative rake angle. This statement incorrectly identifies the claims we found to be directed to tools without a negative rake angle. As is clear from pages 6 through 12 of our decision, we found that claims 1, 5-9, 11-13, 17-26 and 30-33 do not include the negative rake angle limitation argued by appellants as a separate basis for patentability.

In any event, appellants contend that we incorrectly concluded that a proper nexus was lacking between the Buljan II declaration and claim 1 because Buljan II did not show unexpected results in the absence of a negative rake angle orientation. While this characterization of our position with respect to Buljan II is accurate as far as it goes, it is not persuasive that we erred in sustaining the examiner's rejection of claims 1, 5-9, 11-13, 17-26 and 30-33 because it fails to take into consideration an additional aspect of our treatment of Buljan II.

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In discussing Buljan II on pages 11-12 of our decision, we specifically found that the Buljan II declaration "is similar to Buljan I in that it is presented, at least in part, to establish that abrasive tools having abrasive grains chemically bonded to the substrate exhibit unexpectedly superior performance relative to abrasive tools that do not." We then stated that "for the reasons stated above" this evidence (i.e., Buljan II) was unpersuasive. The "for reasons stated above" phrase referred to our treatment of Buljan I on pages 10-11 of our decision, where we found that the Lowder reference applied against the claims establishes that abrasive tools having abrasive grains chemically bonded to the substrate would be expected to exhibit superior performance relative to tools that do not. Accordingly, even if we were to agree with appellants that Buljan II shows exceptional performance for tools having abrasive grains chemically bonded to the substrate regardless of whether the teeth have a negative rake angle, this circumstance would *not* overcome the examiner's *prima facie* case of obviousness because, as explained in our treatment of Buljan I on pages 10-11 of our decision, that result would be expected, rather than unexpected.

Of the remaining claims whose rejection we affirmed, namely claims 14-16, these claims require the combination of (a) grains chemically bonded to the substrate and (b) teeth having a negative rake angle, but do not require (c) successive cutting levels having grains distributed as rings of grains around the teeth. We addressed

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these claims on page 14-16 of our decision. Upon review of this portion of our decision, it appears that clarification of our position with respect to the Buljan II declaration is warranted. Appellants appear to regard the data of Buljan II as establishing exceptional performance of tools having features (a) and (b) as denoted above, regardless of whether the tools also have feature (c). We do not agree. First, while Buljan II characterizes the Sample 280 tool as not having a negative rake angle, we see no reason why this is so since the pyramidal shaped teeth of the Sample 280 tool present sides angled back at 45 degrees relative to the direction of tool movement regardless of the direction the tool is rotated. Our position in this regard is bolstered by appellants' specification, which states in the paragraph spanning pages 14 and 15 that teeth that are angled back at an angle of about 45 degrees relative to the direction of tool movement and that have a flat top provide the desired negative rake condition. Second, it is not clear from Buljan II that the Sample 280 tool has feature (c), that is, successive cutting levels having grains distributed as rings of grains around the teeth. For these reasons, the data on page 3 of Buljan II concerning the Sample 280 tool cannot be accorded substantial weight relative to the question of obviousness of claims 14-16. As we see it, Table 1 on page 3 of Buljan II tends to show that tools without feature (a), that is, without chemically bonded abrasive grains (e.g., Sample E-plated), are inferior to tools having this feature (e.g., Samples 277, 278 and 280), and tools with

the combination of features (a) and (b), but not feature (c) (e.g., Sample 278) are inferior to those having the combination of features (a), (b) and (c) (e.g., Sample 277). Based on this evaluation of Buljan II, we conclude that appellants' evidence of nonobviousness does not outweigh the examiner's evidence of obviousness, namely the Asada, Lowder and Scott references, applied against claims 14-16.

II.

On page 2 of the request, appellants explain that after the examiner cited Lowder against the claims during prosecution, "Buljan I was no longer relevant and Appellants submitted the Buljan II declaration to address the new combination of references. Thus only the Buljan II declaration is relevant to the particular rejection under review on appeal."

To the extent appellants no longer rely of Buljan I, our treatment thereof on pages 10-11 may have been superfluous. Nevertheless, to the degree appellants rely on Buljan II to establish exceptional performance for tools having abrasive grains chemically bonded to the substrate regardless of whether the teeth have a negative rake angle, we maintain our position, as clearly set forth on pages 10-11 with respect to

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both Buljan declarations, that appellants' evidence is insufficient to overcome the examiner's *prima facie* case of obviousness.

III.

Appellants contend on page 2 of the request that we failed to consider the arguments on pages 11-12 of the brief with respect to the steady state cutting conditions limitations found in claims 13 and 30. As pointed out on pages 3-4 of our decision, this aspect of appellants' invention is taught by Asada in the portions of the specification spanning columns 3 and 4. More particularly, note the following explanation found at column 3, line 46, through column 4, line 13, of Asada as to how the Asada tool functions (with emphasis added):

In cutting a work, the top surface 7a of each of the teeth 7 and the abrasive grains 8b, which are the part of the ultra-hard abrasive grains 8 bonded to the peripheral portion of the surface 7a contact with the work to be cut. In this stage, abrasive areas 8b mainly cut the work while the top surface 7a is worn by its contact with the work. *The wear rate of the top surface 7a substantially corresponds to that of the abrasive grains 8b.*

After the part 8b is worn out, the abrasive grains 8c, which are the part of the ultra-hard abrasive grains 8 which are positioned on the base side of each tooth 7 subsequent to abrasive grains 8b, contact with the work so as to cut it, and further subsequent ultra-hard abrasive grains contact with the work *and cut it in the same manner.*

Thus, as shown by the characteristic line a in FIG. 11, the cutting performance of the toothed portion 5 is constant until all the ultra-hard abrasive grains 8 bonded to the teeth 7 have been worn out.

IV.

On pages 2-3 of the request, appellants argue that grains 8b of Asada do not correspond to appellant's "first uppermost cutting level of grains" because grains 8b are not on the top of the teeth. First, this argument fails at the outset because it is not commensurate in scope with the claims, which do not require that the claimed "first uppermost cutting level of grains" be located on the top of the teeth. In this regard, note that appellants' specification expressly states on page 7 that an "uppermost" cutting level is that level which is farthest away from the substrate surface. Thus, a first "uppermost" cutting level need not necessarily be located on the top of the teeth. In any event, the grains 8b of Asada are considered to be located on the top of the teeth by virtue of being located on the edges where the top surfaces of the teeth meet the side walls of the teeth.

Summary

In light of the foregoing, appellants' request for rehearing is granted to the extent of reconsidering our position, but is denied with respect to making any change therein.

REHEARING DENIED

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